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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/657,573	09/08/2000	Young Su Lee	EM/LEE/5990	2704

7590 07/11/2003

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EXAMINER

AZARIAN, SEYED H

ART UNIT	PAPER NUMBER
2625	

DATE MAILED: 07/11/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/657,573	YOUNG SU LEE
	Examiner Seyed Azarian	Art Unit 2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1,2,6 and 7 is/are rejected.
- 7) Claim(s) 3-5 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 08 September 2000 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) Interview Summary (PTO-413) Paper No(s) _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2 and 6-7, are rejected under 35 U.S.C. 103(a) as being unpatentable over Adiletta (U.S. patent 6,295,546) in view of Jeong et al (U.S. patent 5,614,959).

Regarding claim 1, Adiletta discloses a motion estimator architecture for low bit rate communication comprising (Fig. 24, column 11, lines 20-27, motion estimation on the frame data and performed by comparing a particular macroblock).

Previous frame storing means for storing a previous search window data of a current macro block from a previous frame memory (column 9, lines 41-50, refer to previous frames in the video stream and memory 35 and 15, lines 43-59, image between the previous frame and current frame).

A current frame storing means for storing a current macro block data to find a motion vector in a current frame memory (column 11, lines 10-20, storing current frames of particular macroblock and motion estimation).

A multiplexer for multiplexing the previous search window data and the current macro block data to conform to data processing thereof (column 62, lines 8-20, multiplexer provides for a selection of decoded data and encoded bit stream).

Data process means having a plurality of processing elements for calculating a mean absolute error (MAE) of the motion vector with the previous search window data and the current macro block data transmitted from the multiplexer (column 46, lines 25-37 calculating and determining by minimizing the absolute value of the error).

Comparing means for comparatively detecting (column 11, lines 33-43, motion estimation is performed by comparing).

State control means for controlling data flows between the above components (column 52, lines 25-36, refer to controlling the dataflow).

However Adiletta is silent about "calculating of MAE". On the other hand Jeong et al teaches (column 3, lines 16-35, in comparing data of a pixel unit between two block of motion vector mean absolute error MAE, is a minimum).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made, to modify Adiletta invention according to the teaching of Jeong et al because it provides motion estimation errors which are generated by moving in every direction which calculate absolute minimum error and comparing for accuracy and performance.

Regarding claim 2, Adiletta discloses the motion estimator architecture for low bit rate image communication, wherein the motion estimator estimates the motion vector using any of a full search method and an interlace search method according to image characteristics and a bit rate (column 29, lines 2-11, refer to subsequent encoded frames and reduced bit rate).

Regarding claim 6, Adiletta discloses the motion estimator architecture for low bit rate image communication as claimed in claim 1, wherein the motion estimator updates data which is not overlapped with the previous search window data when bringing the search window data of the current macro block from the previous frame storing means (column 15, lines 43-60, changing in the image between the previous frame and the current frame).

Regarding claim 7, Adiletta discloses the motion estimator architecture for low bit rate image communication as claimed in claim 6, wherein the motion estimator calculates addresses differently depending on that number of the update macro block is even or odd when estimating motion of the current macro block (Fig. 8, column 25, lines 40-52, calculating macroblock and the perceptual visual weight accorded to that particular macroblock).

Allowable Subject Matter

3. Claims 3-5, are objected as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitation of the base claim and any intervening claims.

Other prior art cited

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. patent 5,973,742 to Gardyne et al is cited for system and method for performing motion estimation with reduced memory loading latency.

U.S. patent (6,198,772) to Boice et al is cited for motion estimation processor for a digital video encoder.

U.S. patent (6,205,177) to Girod et al is cited for video coder/decoder.

U.S. patent (6,249,318) to Girod et al is cited for video coding/decoding arrangement and method therefor.

U.S. patent (6,310,962) to Chung et al is cited for MPEG2 moving picture encoding/decoding system.

U.S. patent (6,373,895) to Saunders et al is cited for video data compression with trial encoder.

Contact Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seyed Azarian whose telephone number is (703) 306-5907. The examiner can normally be reached on Monday through Thursday from 6:00 a.m. to 7:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached at (703) 308-5246.

Any response to this action should be mailed to:

Assistant Commissioner for Patents
Washington, D.C. 20231

Or faxed to:

(703) 872-9314, ("draft" or "informal" communications should be clearly labeled to expedite delivery to examiner).

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to
T.C. customer service office whose telephone number is (703) 306-0377.

Seyed Azarian
Patent Examiner
Group Art Unit 2625
July 7, 2003

Jayanti K. Patel
Primary Examiner

S. Azarian